DIGITAL FILING AND FILE CONTROL SYSTEM (DFFCS)

TEH SUET KHIM

This project is submitted in partial fulfillment of
the requirement for the degree of Bachelor of Computer Science
with Honours
(Software Engineering)

Faculty of Computer Science and Information Technology
UNIVERSITI MALAYSIA SARAWAK
2006

DECLARATION

This project has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed ……..... (Teh Suet Khim)

Date ……

ACKNOWLEDGEMENT

This final year project would not have been successful without the contribution of many individuals for their kind support and help. Therefore, I would like to take this opportunity deeply indebted to those people in the realization of this project.

First of all, I appreciate the help and support from my beloved supervisor, Miss Vanessa Wee, who had sacrificed a lot of time and effort to lead and guide me during the development of this project.

Secondly, I would like to thank my friends for their kind support, guidance and abundant ideas.

Finally, I would like to thank to my dearest family, who had offer unlimited morale and financial supports in the development of this project. Once again, I would like thanks to everyone that helped me in realizing this project. Thank you!

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

This report is written to present the Digital Filing and File Control System (DFFCS). DFFCS is developed to replace conventional files management system and also to solve the problems that facing by current digital filing systems. Before proceeding to realization the system many researches and studies have been made. The purpose of the study is to have a better understand in the files management and the files control issues. This is because the files management and control issues have become more common and critical nowadays.

DFFCS is developed for the intermediate office to store their company documents and employees' personnel details. DFFCS has presented to be effective procedures for solving the files management and files control problems. The files control is performed by locking and unlocking the currently opened file in the database. The files in the database are arranged methodically according to alphabetical order for easier and convenience files searching and files retrieving.

ABSTRAK

Laporan in telah ditulis untuk menunjukkan Sistem Digital Fail dan Pengawalan Fail (DFFCS). DFFCS dimajukan untuk mengganti sistem pengurusan fail yang tradisional dan juga untuk menyelesaikan masalah yang dihadapi oleh sistem digital fail yang ada sekarang. Sebelum menerus kepada merealisasikan DFFCS, banyak penyelidikan dan pembelajaran telah dibuat. Tujuan penyelidikan dan pembelajaran ini adalah untuk memahami cara pengurusan fail dan isu-isu pengawalan fail. Ini adalah kerana pengurusan fail dan isu-isu pengawalan fail telah menjadi biasa dan kritikal.

DFFCS dimajukan untuk kegunaan syarikat yang sederhana untuk menyimpan dokumen-dokumen dan butir-butiran pekerja. DFFCS menunujukkan prosedur-prosedur yang berkesan untuk menyelesaikan masalah-masalah pengurusan dan pengawalan fail. Pengawalan fail dipertunjukkan oleh penguncian dan pembukaan fail yang sedang digunakan dengan cara menuguncikan pangkalan data. Fail-fail dalam pangkalan data diatur secara tersusun mengikut susunan abjad untuk menyenangkan pencarian dan memperoleh fail dari pangkalan data.

CHAPTER 1: INTRODUCTION

1.0 Introduction

Record keeping is very common and important for most of the organizations especially banks, schools, universities and so on. In the past, the information was recorded by printing on papers and filing in files. This called "paper based filing system". This type of filing system has caused many problems when there are too many records and hard to arrange them in systematic way.

Now, people need not spend precious hours finding a document, or sending paper based inter-office memos, which may not reach their destination. With the increasing capacity and decreasing prices of computer mass memory, all the "papers' documents" can be stored as digital files in a computer or a database server. This is called "digital/electronic filing system". This type of filing system is a systematic arrangement and classification of the information contained in active records for later retrieval, updating, and saving. The files that are stored in the database can be used and shared by all staffs. Meanwhile, the files can be very easy to access. As stated above, the digital filing system will manage the files well and make the work easier, fast and convenient. In the meantime, it will increase the people work quality and save a lot of time and energy. Furthermore, with the Malaysian Government striving towards a digital office environment, it is prudent for businesses and other organizations to explore the possibility of jumping onto the bandwagon [3].

1.1 Problem Statements/ Project Descriptions

There are some organizations already using digital filing system to manage their files and information. But they may face some problems. For example, if there are more than one

employee accesses and edit the same file at the same time, which version will be the latest and complete after they returned the file? There will appear multiple versions of the file. Which versions have to retrieve when the next people want to access the file? In this situation, they may be lost some important data. In other words, there are files control problem occurred. This situation often occurs in a team project , for example in an architect firm, where a group of architects are handling a new building develop project, normally they are sharing all the documents among the group members. When two architects access to the same drawing file that stored in the database and try to edit and save the file at the same time, there must be lost some data and also appear multiple version of file. Thus, file control plays important role to prevent this situation occurred.

Besides that, if the database contains thousands of files and they are not arranged properly, the employees are difficult to search the files they want. They may waste a lot of time for finding the document.

1.2 Proposed System

The improvement that is developed for the Digital Filing and File Control System (DFFCS) can provide a solution to the problems mentioned above. The acronym DFFCS will be used in the later chapters to represent the Digital Filing and File Control System. The DFFCS with well access and file control will be developed to solve the existing problems. The files in the database will be controlled by allowing only one person can edit the files at a time. The edited files will replace the original file to prevent multiple version files exist. Naming convention of the files name also will be considered for convenience searching. Besides that, the DFFCS also used to store the employees' detail of a company.

1.3 Objectives

i. This project aims to develop a Digital Filing and File Control System (DFFCS) that provides better file control in a file sharing environment. There is only one person can access and edit the file at a time. So, the additional information will be safely updated.

ii. To provide an easy file access facility that able to arrange all the files in alphabetical order to convenient the employees when searching for files.

iii. To enhance the data confidentiality by introducing data restriction, where the employees must identify themselves through the login user ID and password.

1.4 Scope

This filing system is only used by the employees of the organization through LAN; no outsider can access the information in the database of the system. This system supports all type of digital files such as Microsoft Office files, text files, and image files and so on. However, for creating a new file, the system only supports several types of file such as Microsoft Word/Power Point/Excel and text file. For other types of files, the users, System Administrator and employees, can create using their own workstation then import to the server/file database. The users, who access to the unlocked files, also be able to edit and update the files. After the users save the edited file, the original one will be replaced. Thus, the users have the choice whether to replace the files or save the edited file in another file name. If not, the last changes will not be saved and the files appear with no changes. To make the files searching more convenience, this system arranges all the files in alphabetical order and the files name are unique. And this system is using three-tier architecture that

included client, server and database. This system only operate the interface side, the database structure will not changed.

1.5 Methodology

The methodology that used in this project to implementing the SDLC is Unified Approach.

UML is used to model this system.

1.5.1 System Planning

Before starting to plan the system, clearly understand the problem statement is very import. Study the problems the organizations facing currently. Besides that, study the existing system and interpret the weaknesses, so that improvement can be added to this project. Plan the budget, schedule, and scope of the project.

1.5.2 System Analysis

In this stage, users' requirements should be clearly understood. To achieve this purpose, can have an interview or meeting with users. ERD and UML diagrams are used to analyze the system. Use case diagram is used to specify the interaction between users and the system. Activity diagram is used to view the flow of sequence of the filing system. The hardware and software tools should be specify such as server, computer and programming language.

1.5.3 System Design

In design stage, the system will be designed based on the analysis and this system is focus on user-friendly interface design. Class diagram is used to design the system. And the ERD is used to design the database.

1.5.4 System Implementation

Implementation is carried out after the system analysis and design phase. The database is constructed and stored in a server. All the operation must be clearly considered and implemented. The programming coding is written to develop the system and connect to the database. The programming tool that will be use to develop this system is Visual Basic 6.0.

1.5.5 System Evaluation/Testing

In this stage, the system will be evaluated and maintained. Evaluation for the system is made to achieve users' satisfaction. Test cases are designed to test the system output. System testing also will be conducted in this stage. The approach that used to test this system is usability testing which the system is tested by users themselves. And the usability test result will be used to improve the system and satisfy the users' need.

1.6 Project Significant

With this systematic DFFCS, all the files in the organizations will be managed methodically. The file with multiple versions problem that is faced by most of the organizations will be solved. Besides that, all the files in the organization will securely store in the database, and no outsider can access to the files. The files in the organization will be

stored in the server, and the users will get the files easily and fast. With this system, the users will work efficiently and effectively.

1.7 Expected Outcome

At the end of the project, the filing system that fully functions well through LAN in an organization will be produced. The files in the organization will be stored in the server, and the users will get the files easily and fast. With this system, the users will work efficiently and effectively. This system only allows one user to access the file and edit it. The others are not allowed to access the same file until the previous user unlocks the file. In addition, other users are able to know who is currently using the file if the file is locked. The file will be replaced after the user updates the file. So, there are no multiple files version appears. This system also can manage all the files methodically. This means there is no human energy needed to tidy up and arrange the files.

1.8 Project Planning

This project will take 22 weeks to complete. The starting date is on 4 April 2005, and estimate will be finished on 7 April 2006. However, the project will be stopping temporary from 28 May 2005 until 25 December 2005. This is because of holiday and industrial training will be conducted. The project will continue on 26 December 2005 until finishing the project on 7 April 2006. Refer to APPENDIX A for project schedule.

1.9 Project Outline

This section will discuss the outline of each chapter in this Digital Filing and File Control System (DFFCS) project. There are six chapters will be included in this project.

They are introduction, research background, requirement analysis, system design, implementation and testing, and conclusion and future work. Each chapter is documented in this interim report covers the aspect of the entire system.

1.9.1 Chapter 1: Introduction

This chapter will discuss a short tour on the entire project. The main idea includes introduction of the project, and the problems the existing systems faced. Besides that, a proposed solution will be briefly described in this chapter. In addition, the objectives, scope of study, methodology, project significant, expected outcome and project planning are also discussed here.

1.9.2 Chapter 2: Research Background

In this chapter, a review is done on the existing digital filing systems. The operation of these systems will be described. The hardware or devices that are needed and the files' format the systems able to support will be discussed too. Moreover, the systems' functions and features and the advantages and disadvantages will be discussed in this chapter. Lastly, a table that concludes the functionalities will be created.

1.9.3 Chapter 3: Requirement Analysis

This section will indicate the ways in which the requirements have been obtained, expressed, prioritized and detailed in an appropriate form. The System Development Life Cycle (SDLC) will be used to develop DFFCS and lastly, the hardware and software requirements are also included here. UML diagrams are used to analyze the system.

1.9.4 Chapter 4: System Design

After analyzing the system, the system design will then be discussed in this chapter. System design highlight the work pioneered in this project. The physical and logical design will be discussed in detail here. ERD will also be used to describe the relationship of the entities in the system.

1.9.5 Chapter 5: Implementation and Testing

Implementation of this system is done in this section. The system modules will be described clearly in this chapter. Besides that, the system testing processes are carried out in conjunction with the system implementation. The main concern of the testing is to ensure the system is functional, usable, and meet the project requirements.

1.9.6 Chapter 6: Conclusion and Future Work

This is the last chapter for this project. The conclusion and the future work of the DFFCS will be made. A conclusion is drawn from the whole project. Valuable ideas and information are collected throughout the project will be added here. Besides that, the limitations and future work that can be done on the project will be mentioned.

CHAPTER 2: RESEARCH BACKGROUND

2.0 Literature Review

2.1 Introduction

Digital filing means that filing the paper documents in digital form then storing the files in a database or a server for later retrieval. It begins with a commitment to capture digital images of all incoming/outgoing paper stored as digital files in a structured system [2]. Digital filing system has a great different from paper-based filing. A database or a server has the same function as a cabinet that used to keep all the paper documents. But the database or server has more flexible and easier ways to manage all the files. Digital filing is convenience, easy to used, tidy, and not time-consuming and save a lot of human energy.

This section will study the current existing digital filing systems. There are some different digital filings systems exist in the market or using by a certain company such as web-based digital filing system and local area network filing system. So, the ways the systems operate and manage the files are also different. A brief description of the operation of each system will be included. The functions and features of each system also will be briefly described. Moreover, each digital filing system will have its own advantages and disadvantages. So, comparison of the existing systems will be made and come out with the proposed Digital Filing and File Control System (DFFCS). In addition, the review on several type of database will be included. And the programming language that will be used in the proposed system will be studied.